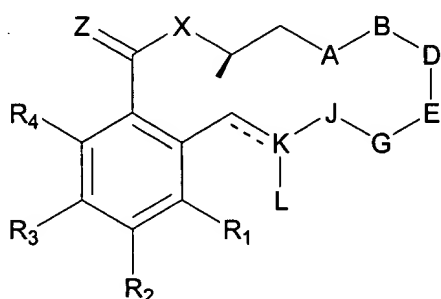


Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently amended) A compound having the structure:



wherein the dotted line --- represents an optional bond, such that either a single or a double bond is present;

R₁ is hydrogen, halogen, an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety, or N(R_A)₂, wherein each occurrence of R_A is independently hydrogen, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety;

R₂ is hydrogen, halogen, cyano, -OR_B, -N(R_B)₂, -SR_B, -O(C=O)R_B, -N(R_B)(C=O)(R_B), -C(O)R_B, -C(O)OR_B, -CON(R_B)₂, -OCO₂R_B, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety, wherein each occurrence of R_B is independently hydrogen, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety;

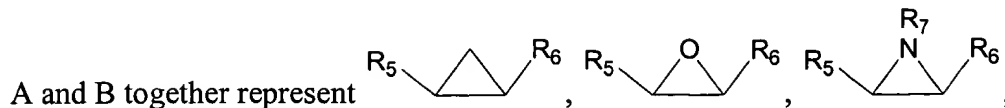
R₃ is hydrogen, halogen, an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety, or -N(R_C)₂, wherein each occurrence of R_C is independently hydrogen, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety;

R₄ is hydrogen, halogen, cyano, -OR_D, -N(R_D)₂, -SR_D, -O(C=O)R_D, -N(R_D)(C=O)(R_D), -C(O)R_D, -C(O)OR_D, -CON(R_D)₂, -OCO₂R_D, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety, wherein each occurrence of R_D is independently hydrogen,

or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety;

Z is O;

X is O;



-CHR₅-CHR₆-, -CR₅=CR₆-, wherein R₅ and R₆ are each independently hydrogen, halogen, cyano, -OR_J, -N(R_J)₂, -SR_J, -O(C=O)R_J, -O(S=O)R_J, -N(R_J)(C=O)(R_J), -C(=O)R_J, -C(=O)OR_J, -CON(R_J)₂, -OCO₂R_J, -OSO₂R_J, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety, wherein each occurrence of R_J is independently hydrogen, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety, and wherein R₇ is hydrogen, -OR_K, -SR_K, -C(O)OR_K, -S(O)₂R_K, -O(C=O)R_K, -N(R_K)(C=O)(R_K), -C(O)R_K, -C(O)OR_K, -CON(R_K)₂, -OCO₂R_K, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety, wherein each occurrence of R_K is independently hydrogen, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety, or when A and B together represent -CHR₅-CHR₆-, R₅ and R₆ taken together represent a substituted or unsubstituted 3-7 membered aliphatic, heteroaliphatic, aryl or heteroaryl ring,

D and E together represent -CHR₈-CHR₉-, -CR₈=CR₉-, wherein R₈ and R₉ are each independently hydrogen or lower alkyl;

G and J together represent -CHR₁₀-CHR₁₁-, -CR₁₀=CR₁₁-, wherein R₁₀ and R₁₁ are each independently hydrogen or lower alkyl;

K and L together represent C=O, C=S, CH-CH₃, CH-CH(R_L)₂, C=C(R_L)₂, -CH₂-, -C(-S(CH₂)₃S-)-, CH-OR_L, CH-SR_L, CH-N(R_L)₂, CH-N(R_L)(C=O)(R_L), C=N-O-R_L, CH-N=O, C=C(R_L)-N(R_L)₂, C=N-R_L, C=N-N(R_L)₂, or, if the dotted line --- represents a bond, whereby a double bond is present, then K and L together represent C-N(R_L)₂, wherein each occurrence of R_L is independently hydrogen, an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety, or two occurrences of R_L taken together represent a 3 to 7-membered cyclic aliphatic, heteroaliphatic, aromatic or heteroaromatic moiety;

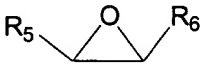
whereby each of the foregoing aliphatic and heteroaliphatic moieties may independently be substituted or unsubstituted, cyclic or acyclic, or branched or unbranched, and each aryl,

heteroaryl, alkylaryl, and alkylheteroaryl moiety may be substituted or unsubstituted;

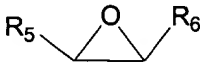
wherein one or any two of R_1 , R_A , R_2 , R_B , R_3 , R_C , R_4 , R_D , R_5 , R_6 , R_J , or R_L are optionally a linker covalently bonded to a compound selected from the group consisting of radicicol, monocillin, geldanamycin, and steroids; and

pharmaceutically acceptable derivatives thereof,

with the proviso that:

(1) if A and B together are  and R_5 and R_6 are each hydrogen; if D and E together are $-\text{CH}=\text{CH}-$; if G and J together are $-\text{CH}=\text{CH}-$; if K and L together are $\text{C}=\text{O}$; if R_1 is hydrogen or Cl; and if R_3 is hydrogen,

then R_2 is not $-\text{OR}_B$ or $-\text{O}(\text{C}=\text{O})\text{R}_B$, wherein R_B is hydrogen or an alkyl, alkoxy, alkenyl, alkenyloxy, alkynyl, aryl, tert-butyldimethylsilyl, arylalkyl, aryloxy, heterocycle, heteroaryl, cycloalkyl, cycloalkenyl, or cycloalkenyl fused to an aryl group; and R_4 is not $-\text{OR}_D$ or $-\text{O}(\text{C}=\text{O})\text{R}_D$, wherein R_D is hydrogen or an alkyl, alkoxy, alkenyl, alkenyloxy, alkynyl, aryl, tert-butyldimethylsilyl, arylalkyl, aryloxy, heterocycle, heteroaryl, cycloalkyl, cycloalkenyl, or cycloalkenyl fused to an aryl group;

(2) if A and B together are  and R_5 and R_6 are each hydrogen; if D and E together are $-\text{CH}_2-\text{CH}_2-$; if G and J together are $-\text{CH}_2-\text{CH}_2-$; if K and L together are $\text{C}=\text{O}$; if R_1 is Cl; and if R_3 is hydrogen,

then R_2 is not $-\text{OR}_B$ or $-\text{O}(\text{C}=\text{O})\text{R}_B$, wherein R_B is hydrogen or an alkyl, alkoxy, alkenyl, alkenyloxy, alkynyl, aryl, aryloxy, heterocycle, cycloalkyl, cycloalkenyl, or cycloalkenyl fused to an aryl group; and R_4 is not $-\text{OR}_D$ or $-\text{O}(\text{C}=\text{O})\text{R}_D$, wherein R_D is hydrogen or an alkyl, alkoxy, alkenyl, alkenyloxy, alkynyl, aryl, aryloxy, heterocycle, cycloalkyl, cycloalkenyl, or cycloalkenyl fused to an aryl group; and

(3) if R_1 is Cl; if R_2 is OR_A OR_B and R_A R_B is hydrogen, alkanoyl, alkenoyl, tert-butyl dimethylsilyl or tert-butyldiphenylsilyl; if R_3 is hydrogen; if R_4 is OR_B OR_D and R_B R_D is hydrogen, alkanoyl, alkenoyl, tert-butyldimethylsilyl, or tert-butyldiphenylsilyl; if D and E

together are $-\text{CH}=\text{CH}-$; if G and J together are $-\text{CH}=\text{CH}-$; if A and B together are



or if A and B together are $-\text{CHR}_5-\text{CHR}_6-$ and R₆ is halogen and R₅ is OR_J, wherein R_J is hydrogen, alkanoyl, or alkenoyl, or R₅ is $-\text{O}(\text{S}=\text{O})\text{R}_J$, wherein R_J is a second compound of formula (I) linked via an oxygen atom present at R₅ in the second compound of formula (I), and wherein R₆ of the second compound of formula (I) is halogen; Z of the second compound of formula (I) is O; X of the second compound of formula (I) is O, R₁ of the second compound of formula (I) is Cl; R₂ of the second compound of formula (I) is OR_A OR_B and R_A R_B is hydrogen, alkanoyl, alkenoyl, tert-butyl dimethylsilyl or tert-butyldiphenylsilyl; R₃ of the second compound of formula (I) is hydrogen; R₄ of the second compound of formula (I) is OR_B OR_D and R_B R_D is hydrogen, alkanoyl, alkenoyl, tert-butyldimethylsilyl, or tert-butyldiphenylsilyl;

then K and L together are not C=O or C=N-O-R_L, when R_L is hydrogen, or substituted or unsubstituted lower alkyl, a substituted or unsubstituted alkenyl moiety, a substituted acyl moiety or a substituted or unsubstituted aryl moiety;

except that K and L together can be C=N-O-R_L, when R_L is a linker covalently bonded to a compound selected from the group consisting of radicicol, monocillin, geldanamycin, and steroids.

2. (Previously presented) The compound of claim 1, wherein one or any two of R₁, R_A, R₂, R_B, R₃, R_C, R₄, R_D, R₅, R₆, R_J, or R_L are a linker covalently bonded to a compound selected from the group consisting of radicicol, monocillin, geldanamycin, and steroids, wherein the linker is an aliphatic or heteroaliphatic moiety, whereby said aliphatic or heteroaliphatic moiety is substituted or unsubstituted, branched or unbranched, or cyclic or acyclic.

3. (Previously presented) The compound of claim 1, wherein one or any two of R₁, R_A, R₂, R_B, R₃, R_C, R₄, R_D, R₅, R₆, R_J, or R_L are a linker covalently bonded to a compound selected from the group consisting of radicicol, monocillin, geldanamycin, and steroids, wherein the linker is a moiety having one of the structures $-(\text{CH}_2)_n-\text{CH}=\text{CH}-(\text{CH}_2)_m-$, $-(\text{CH}_2)_p-\text{C}\equiv\text{C}-(\text{CH}_2)_q-$,

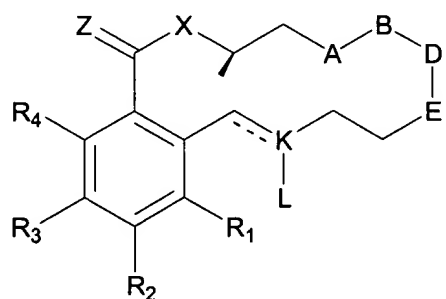
or $-\text{CH}_2(\text{CH}_2)_s\text{CH}_2-$, wherein each occurrence of n, m, p, q and s is independently an integer from 0-10, and wherein one or more of the hydrogen atoms are optionally replaced with an alkyl, heteroalkyl, aryl, heteroaryl, alkylaryl or alkylheteroaryl moiety or a secondary or tertiary amine, hydroxyl, or thiol.

4. (Canceled)

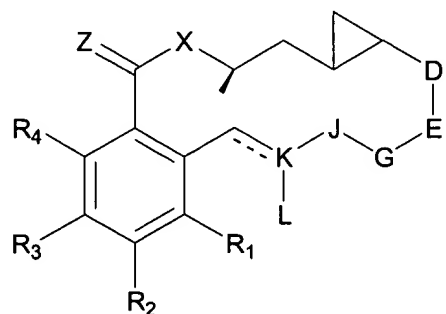
5. (Canceled)

6. (Canceled)

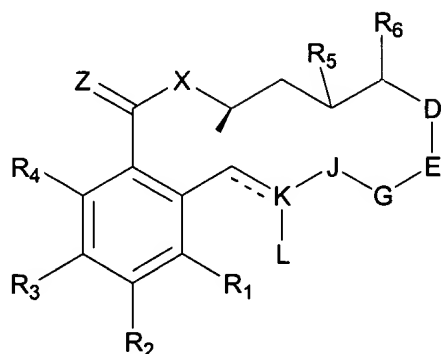
7. (Original) The compound of claim 1, wherein G and J together represent $-\text{CH}_2-\text{CH}_2-$ and the compound has the structure:



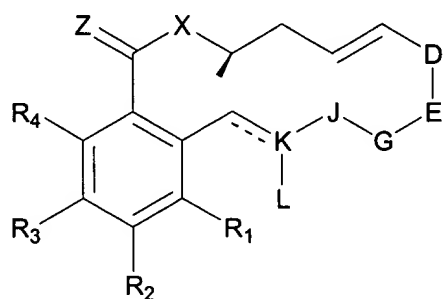
8. (Original) The compound of claim 1, wherein A-B is a cyclopropyl ring and the compound has the structure:



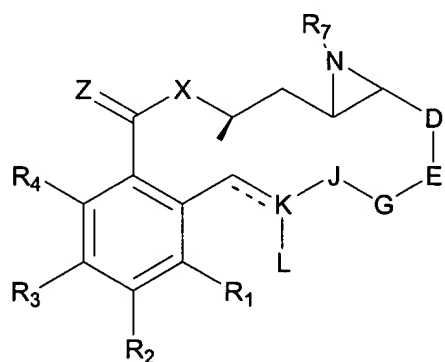
9. (Original) The compound of claim 1, wherein A and B together represent -CHR₅-CHR₆- and the compound has the structure:



10. (Original) The compound of claim 1, wherein A and B together represent -CH=CH- and the compound has the structure:

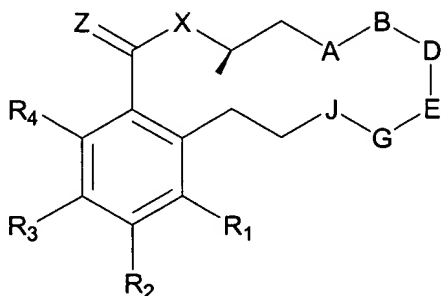


11. (Original) The compound of claim 1, wherein A and B together represent an aziridine and the compound has the structure:

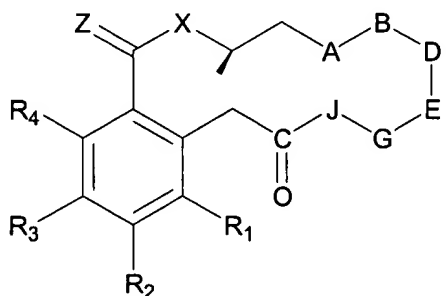


12. (Previously presented) The compound of claim 1, wherein the optional bond

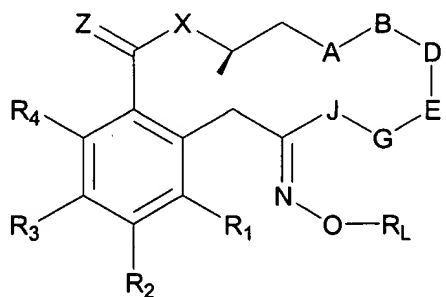
represented by the dotted line --- is absent so that a single bond is present, K and L together represent $-\text{CH}_2-$ and the compound has the structure:



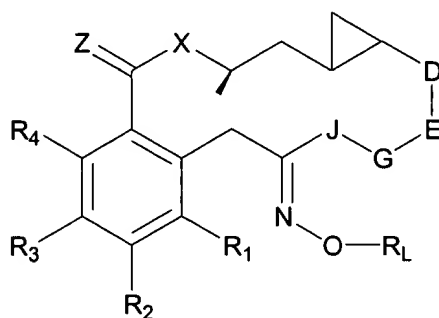
13. (Previously presented) The compound of claim 1, wherein the optional bond represented by the dotted line --- is absent so that a single bond is present, K-L together represent $\text{C}=\text{O}$ and the compound has the structure:



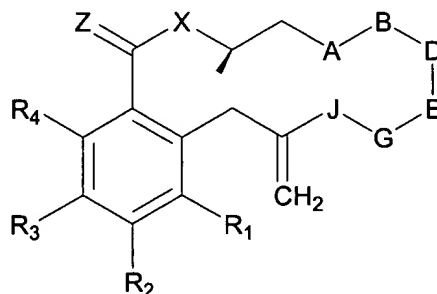
14. (Previously presented) The compound of claim 1, wherein the optional bond represented by the dotted line --- is absent so that a single bond is present, K and L together represent $\text{C}=\text{N}-\text{O}-\text{R}_L$ and the compound has the structure:



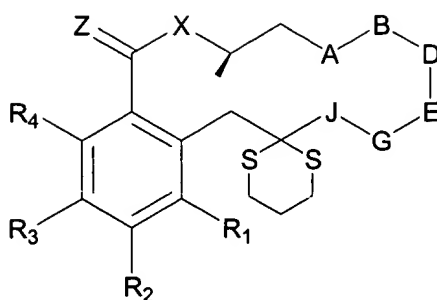
15. (Previously presented) The compound of claim 1, wherein the optional bond represented by the dotted line --- is absent so that a single bond is present, A and B together represent a cyclopropyl group, K and L together represent $C=N-O-R_L$ and the compound has the structure:



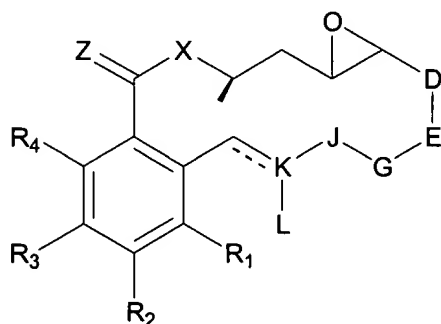
16. (Previously presented) The compound of claim 1, wherein the optional bond represented by the dotted line --- is absent so that a single bond is present, K and L together represent $C=CH_2$ and the compound has the structure:



17. (Previously presented) The compound of claim 1, wherein the optional bond represented by the dotted line --- is absent so that a single bond is present, K and L together represent a dithiane, $-C(-S(CH_2)_3S)-$, and the compound has the structure:



18. (Currently amended) The compound of claim 1, wherein A and B together represent an epoxide and the compound has the structure:



wherein at least one of the D-E, G-J, K-L, R₂ and R₄ are defined as:

R₂ is hydrogen, halogen, cyano, -N(R_B)₂, -SR_B, -N(R_B)(C=O)(R_B), -C(O)R_B, -C(O)OR_B, -CON(R_B)₂, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety, wherein each occurrence of R_B is independently hydrogen, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety;

R₃ is not hydrogen;

R₄ is hydrogen, halogen, cyano, -N(R_D)₂, -SR_D, -N(R_D)(C=O)(R_D), -C(O)R_D, -C(O)OR_D, -CON(R_D)₂, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety, wherein each occurrence of R_D is independently hydrogen, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety;

D and E together represent -CHR₈-CHR₉- wherein R₈ and R₉ are each independently hydrogen or lower alkyl;

G and J together represent -CHR₁₀-CHR₁₁-, wherein R₁₀ and R₁₁ are each independently

hydrogen or lower alkyl;

K and L together represent C=S, CH-CH₃, CH-CH(R_L)₂, C=C(R_L)₂, -CH₂-, -C(-S(CH₂)₃S-)-, CH-OR_L, CH-SR_L, CH-N(R_L)₂, CH-N(R_L)(C=O)(R_L), CH-N=O, C=C(R_L)-N(R_L)₂, C=N-R_L, C=N-N(R_L)₂, or, if the optional bond represented by the dotted line --- is present so that a double bond is present, then K and L together represent C-N(R_L)₂, wherein each occurrence of R_L is independently hydrogen, an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety, or two occurrences of R_L taken together represent a 3 to 7-membered cyclic aliphatic, heteroaliphatic, aromatic or heteroaromatic moiety; or any two of R₁, R_A, R₂, R_B, R₃, R_C, R₄, R_D, R₅, R₆, R_J, or R_L are a linker covalently bonded to a compound selected from the group consisting of radicicol, monocillin, geldanamycin, and steroids.

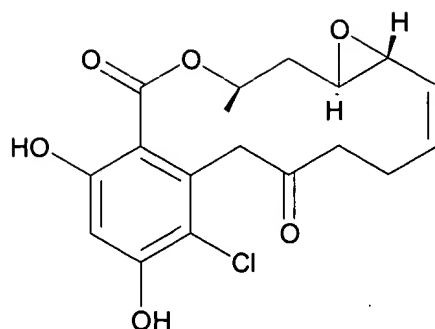
19. (Previously presented) The compound of claim 1, wherein A and B together are -CHR₅-CHR₆- or -CR₅=CR₆- and R₅ and R₆ are each independently hydrogen, halogen, cyano, -OR_J, -N(R_J)₂, -SR_J, -O(C=O)R_J, O(S=O)R_J, -N(R_J)(C=O)(R_J), -OCO₂R_J or -OSO₂R_J and each occurrence of R_J is independently hydrogen, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety.

20. (Original) The compound of claim 19, wherein R₅ and R₆ are each independently hydrogen, or lower alkyl.

21. (Previously presented) The compound of claim 1, wherein R₁ and R₃ are each independently halogen, hydrogen, or lower alkyl; R₂ is hydrogen or -OR_B, wherein each occurrence of R_B is independently hydrogen, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety, and R₄ is hydrogen or -OR_D, wherein each occurrence of R_D is independently hydrogen, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety.

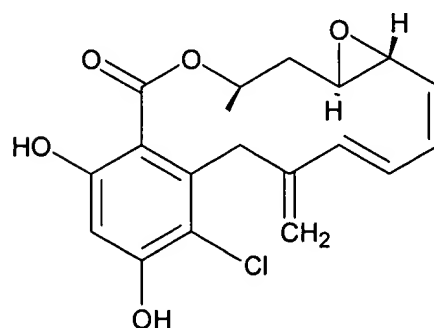
22. (Currently amended) ~~The compound of claim 1, wherein the A~~ compound ~~has~~ having the

structure:

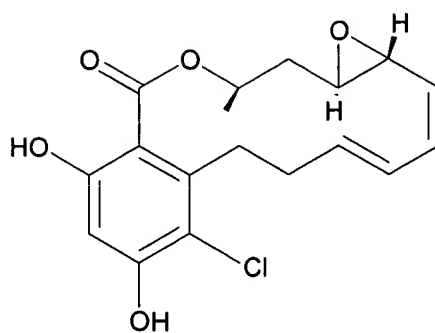


23. (Canceled)

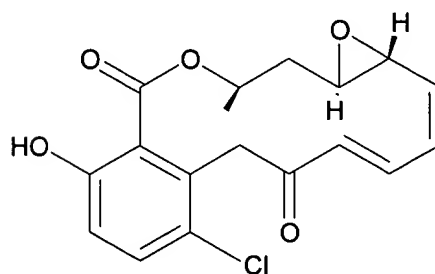
24. (Currently amended) ~~The compound of claim 1, wherein the A compound has~~ having the structure:



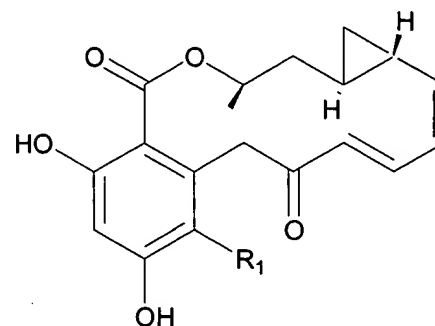
25. (Currently amended) ~~The compound of claim 1, wherein the A compound has~~ having the structure:



26. (Currently amended) ~~The compound of claim 1, wherein the A compound has~~ having the structure:



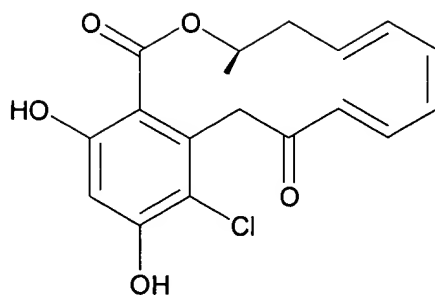
27. (Currently amended) ~~The compound of claim 1, wherein the A compound has~~ having the structure:



wherein R₁ is hydrogen or Cl.

28. (Currently amended) ~~The compound of claim 1, wherein the A compound has~~ having the

structure:



29. (Canceled)

30. (Previously presented) A pharmaceutical composition for treating Hsp90-dependent cancers comprising a compound of claim 1 and a pharmaceutically acceptable carrier.

31. (Canceled)

32. (Canceled)

33. (Previously presented) A method for treating an Hsp90-dependent cancer comprising:
administering a therapeutically effective amount of a compound of claim 1 to a subject in need thereof.

34. (Original) The method of claim 33, wherein the therapeutically effective amount is in the range of 0.001 mg/kg to 50 mg/kg of body weight.

35. (Original) The method of claim 33, wherein the therapeutically effective amount is in the range of 0.01 mg/kg to about 25 mg/kg of body weight.

36. (Canceled)

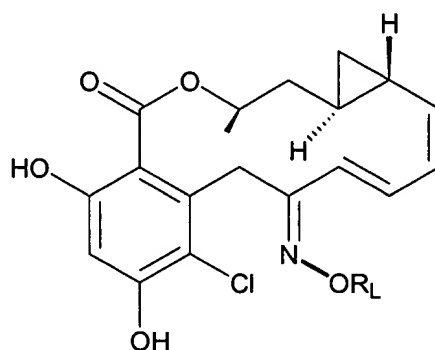
37. (Canceled)

38. (Previously presented) A method for inhibiting the growth of or killing Hsp90-dependent cancer cells, said method comprising:

contacting Hsp90-dependent cancer cells with an amount of a compound of claim 1 effective to inhibit the growth of or kill the cancer cells.

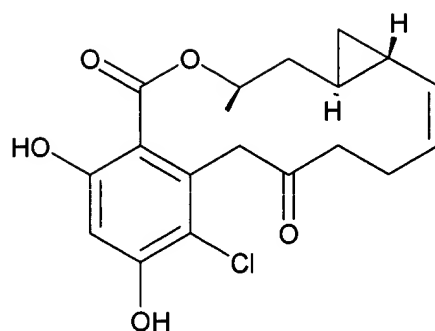
39.-56. (Canceled)

57. (Currently amended) ~~The compound of claim 1, wherein the A compound has~~ having the structure:



wherein R_L is independently hydrogen, an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety.

58. (Currently amended) ~~The compound of claim 1, wherein the A compound has~~ having the structure:



59. (Currently amended) A method for inhibiting the growth of or killing cancer cells that do not express retinoblastoma (Rb⁻ cancer cells), said method comprising:

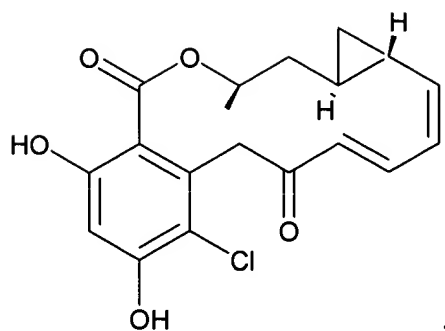
contacting Rb⁻ cancer cells with an amount of a compound of claim 1 effective to inhibit the growth of or kill the cancer cells.

60. (Canceled)

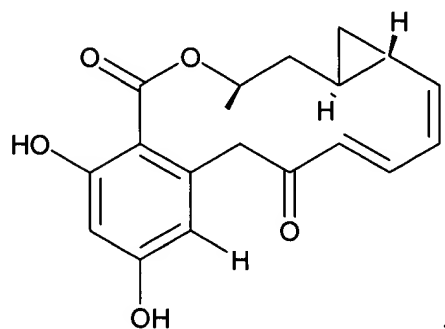
61. (Currently amended) The method of claim 59 ~~or 60~~, wherein the cancer cells are selected from the group consisting of small-cell carcinoma cells, glioblastoma cells, and retinoblastoma cells.

62. (Previously presented) The method of claim 38, wherein the cancer cells are selected from the group consisting of lung cancer cells, prostate cancer cells, multiple myeloma cells, and melanoma cells.

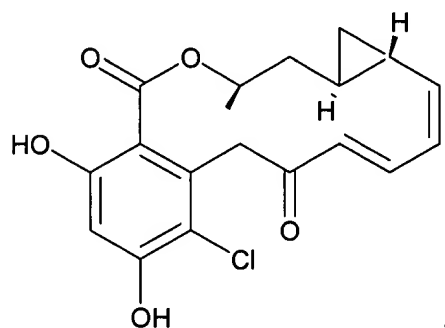
63. (New) The pharmaceutical composition of claim 30, wherein the compound has the structure:



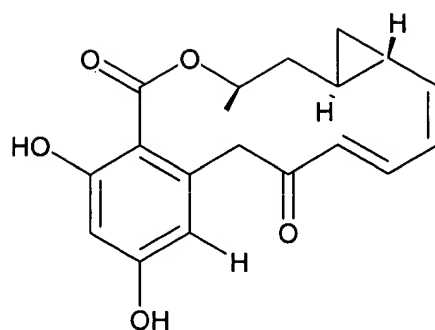
64. (New) The pharmaceutical composition of claim 30, wherein the compound has the structure:



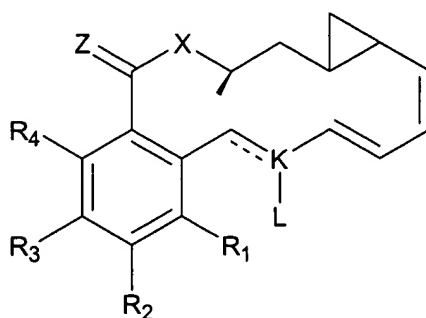
65. (New) The method of claim 33, 38, 59, 61, or 62, wherein the compound has the structure:



66. (New) The method of claim 33, 38, 59, 61, or 62, wherein the compound has the structure:



67. (New) A compound having the structure:



wherein the dotted line --- represents an optional bond, such that either a single or a double bond is present;

R_1 is hydrogen, halogen, an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety, or $N(R_A)_2$, wherein each occurrence of R_A is independently hydrogen, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety;

R_2 is hydrogen, halogen, cyano, $-OR_B$, $-N(R_B)_2$, $-SR_B$, $-O(C=O)R_B$, $-N(R_B)(C=O)(R_B)$, $-C(O)R_B$, $-C(O)OR_B$, $-CON(R_B)_2$, $-OCO_2R_B$, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety, wherein each occurrence of R_B is independently hydrogen, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety;

R_3 is hydrogen, halogen, an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety, or $-N(R_C)_2$, wherein each occurrence of R_C is independently hydrogen, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety;

R_4 is hydrogen, halogen, cyano, $-OR_D$, $-N(R_D)_2$, $-SR_D$, $-O(C=O)R_D$, $-N(R_D)(C=O)(R_D)$, $-C(O)R_D$, $-C(O)OR_D$, $-CON(R_D)_2$, $-OCO_2R_D$, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety, wherein each occurrence of R_D is independently hydrogen,

or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety;

Z is O;

X is O;

K and L together represent C=O, C=S, CH-CH₃, CH-CH(R_L)₂, C=C(R_L)₂, -CH₂-, -C(-S(CH₂)₃S-)-, CH-OR_L, CH-SR_L, CH-N(R_L)₂, CH-N(R_L)(C=O)(R_L), C=N-O-R_L, CH-N=O, C=C(R_L)-N(R_L)₂, C=N-R_L, C=N-N(R_L)₂, or, if the dotted line --- represents a bond, whereby a double bond is present, then K and L together represent C-N(R_L)₂, wherein each occurrence of R_L is independently hydrogen, an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety, or two occurrences of R_L taken together represent a 3 to 7-membered cyclic aliphatic, heteroaliphatic, aromatic or heteroaromatic moiety;

whereby each of the foregoing aliphatic and heteroaliphatic moieties may independently be substituted or unsubstituted, cyclic or acyclic, or branched or unbranched, and each aryl, heteroaryl, alkylaryl, and alkylheteroaryl moiety may be substituted or unsubstituted;

wherein one or any two of R₁, R_A, R₂, R_B, R₃, R_C, R₄, R_D, R_J, or R_L are optionally a linker covalently bonded to a compound selected from the group consisting of radicicol, monocillin, geldanamycin, and steroids; and

pharmaceutically acceptable derivatives thereof.

68. (New) The compound of claim 67, wherein R₁ and R₃ are each independently halogen, hydrogen, or lower alkyl;

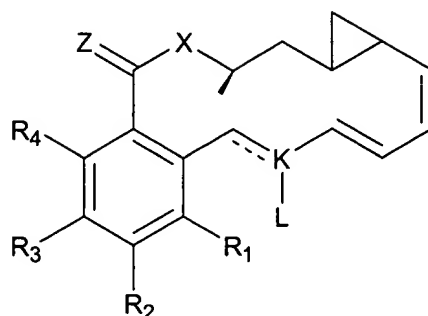
R₂ is hydrogen or -OR_B, wherein R_B is independently hydrogen, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety; and

R₄ is hydrogen or -OR_D, wherein R_D is independently hydrogen, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety.

69. (New) The compound of claim 67, wherein K and L taken together are C=N-O-R_L.

70. (New) The compound of claim 68, wherein K and L taken together are C=N-O-R_L.

71. (New) The pharmaceutical composition of claim 30, wherein the compound has the structure:



wherein the dotted line --- represents an optional bond, such that either a single or a double bond is present;

R_1 is hydrogen, halogen, an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety, or $N(R_A)_2$, wherein each occurrence of R_A is independently hydrogen, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety;

R_2 is hydrogen, halogen, cyano, $-OR_B$, $-N(R_B)_2$, $-SR_B$, $-O(C=O)R_B$, $-N(R_B)(C=O)(R_B)$, $-C(O)R_B$, $-C(O)OR_B$, $-CON(R_B)_2$, $-OCO_2R_B$, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety, wherein each occurrence of R_B is independently hydrogen, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety;

R_3 is hydrogen, halogen, an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety, or $-N(R_C)_2$, wherein each occurrence of R_C is independently hydrogen, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety;

R_4 is hydrogen, halogen, cyano, $-OR_D$, $-N(R_D)_2$, $-SR_D$, $-O(C=O)R_D$, $-N(R_D)(C=O)(R_D)$, $-C(O)R_D$, $-C(O)OR_D$, $-CON(R_D)_2$, $-OCO_2R_D$, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety, wherein each occurrence of R_D is independently hydrogen, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety;

Z is O;

X is O;

K and L together represent $C=O$, $C=S$, $CH-CH_3$, $CH-CH(R_L)_2$, $C=C(R_L)_2$, $-CH_2-$, $-C(-S(CH_2)_3S-)-$, $CH-OR_L$, $CH-SR_L$, $CH-N(R_L)_2$, $CH-N(R_L)(C=O)(R_L)$, $C=N-O-R_L$, $CH-N=O$, $C=C(R_L)-N(R_L)_2$, $C=N-R_L$, $C=N-N(R_L)_2$, or, if the dotted line --- represents a bond, whereby a

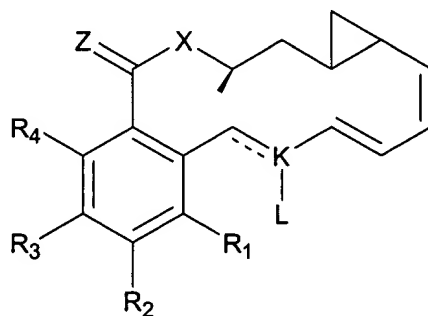
double bond is present, then K and L together represent $C-N(R_L)_2$, wherein each occurrence of R_L is independently hydrogen, an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety, or two occurrences of R_L taken together represent a 3 to 7-membered cyclic aliphatic, heteroaliphatic, aromatic or heteroaromatic moiety;

whereby each of the foregoing aliphatic and heteroaliphatic moieties may independently be substituted or unsubstituted, cyclic or acyclic, or branched or unbranched, and each aryl, heteroaryl, alkylaryl, and alkylheteroaryl moiety may be substituted or unsubstituted;

wherein one or any two of R_1 , R_A , R_2 , R_B , R_3 , R_C , R_4 , R_D , R_J , or R_L are optionally a linker covalently bonded to a compound selected from the group consisting of radicicol, monocillin, geldanamycin, and steroids; and

pharmaceutically acceptable derivatives thereof.

72. The method of claim 33, 38, 59, 61, or 62, wherein the compound has the structure:



wherein the dotted line --- represents an optional bond, such that either a single or a double bond is present;

R_1 is hydrogen, halogen, an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety, or $N(R_A)_2$, wherein each occurrence of R_A is independently hydrogen, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety;

R_2 is hydrogen, halogen, cyano, $-OR_B$, $-N(R_B)_2$, $-SR_B$, $-O(C=O)R_B$, $-N(R_B)(C=O)(R_B)$, $-C(O)R_B$, $-C(O)OR_B$, $-CON(R_B)_2$, $-OCO_2R_B$, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety, wherein each occurrence of R_B is independently hydrogen, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety;

R_3 is hydrogen, halogen, an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or

alkylheteroaryl moiety, or $-N(R_C)_2$, wherein each occurrence of R_C is independently hydrogen, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety;

R_4 is hydrogen, halogen, cyano, $-OR_D$, $-N(R_D)_2$, $-SR_D$, $-O(C=O)R_D$, $-N(R_D)(C=O)(R_D)$, $-C(O)R_D$, $-C(O)OR_D$, $-CON(R_D)_2$, $-OCO_2R_D$, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety, wherein each occurrence of R_D is independently hydrogen, or an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety;

Z is O;

X is O;

K and L together represent $C=O$, $C=S$, $CH-CH_3$, $CH-CH(R_L)_2$, $C=C(R_L)_2$, $-CH_2-$, $-C(-S(CH_2)_3S-)-$, $CH-OR_L$, $CH-SR_L$, $CH-N(R_L)_2$, $CH-N(R_L)(C=O)(R_L)$, $C=N-O-R_L$, $CH-N=O$, $C=C(R_L)-N(R_L)_2$, $C=N-R_L$, $C=N-N(R_L)_2$, or, if the dotted line --- represents a bond, whereby a double bond is present, then K and L together represent $C-N(R_L)_2$, wherein each occurrence of R_L is independently hydrogen, an aliphatic, heteroaliphatic, aryl, heteroaryl, alkylaryl, or alkylheteroaryl moiety, or two occurrences of R_L taken together represent a 3 to 7-membered cyclic aliphatic, heteroaliphatic, aromatic or heteroaromatic moiety;

whereby each of the foregoing aliphatic and heteroaliphatic moieties may independently be substituted or unsubstituted, cyclic or acyclic, or branched or unbranched, and each aryl, heteroaryl, alkylaryl, and alkylheteroaryl moiety may be substituted or unsubstituted;

wherein one or any two of R_1 , R_A , R_2 , R_B , R_3 , R_C , R_4 , R_D , R_J , or R_L are optionally a linker covalently bonded to a compound selected from the group consisting of radicicol, monocillin, geldanamycin, and steroids; and

pharmaceutically acceptable derivatives thereof.

73. (New) A pharmaceutical composition for treating a cancer sensitive to the compounds of claim 1 comprising a compound of claim 1 and a pharmaceutically acceptable carrier.

74. (New) A method for treating a cancer sensitive to the compounds of claim 1 comprising: administering a therapeutically effective amount of a compound of claim 1 to a subject in need thereof.